UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,079	07/08/2003	Stephen H. Zalewski	12745/3	9684

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EXAMINER
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ART UNIT	PAPER NUMBER
2187	

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/616,079	ZALEWSKI ET AL.
	Examiner	Art Unit	
	Hiep T. Nguyen	2187	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 July 2003</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-36</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-36</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

U.S. Patent and Trademark Office

PTOL-326 (Rev. 1-04)   Office Action Summary   Part of Paper No./Mail Date 20050806

DETAILED ACTION

1. Claims 1-36 are presented for examination.

2. In the specification, page 1, applicant is required to provide the application numbers of the cited copending applications when such application numbers become available.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 25-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

   a. As per claim 25, line 1, the recitation of "[A] set of instruction residing in a storage medium" makes it unclear whether the storage medium or the instruction set is being claimed. If the instruction set are being claimed, the claims also do not meet the requirement of 35 USC 101. Applicant is suggested to clearly recite a computer program product as –[A] computer readable medium storing a set of instructions ...-- Furthermore, the use of "capable" makes it unclear whether the instructions are actually executed or not. Appropriate correction is required.

   b. Claims 26-36 are rejected as including the deficiencies in the independent claim 25.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

   a. A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which

said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujibayashi, US 2003/0131278 in view of well known features of which Official Notice is hereby taken.

    a. <u>As per claim 1:</u>

        i. Fujibayashi teaches a method for protecting stored data [see figure 1], comprising:

            1. Storing a source set of data (P) on a first storage medium (125) [paragraph 19, lines 11-12];

            2. Designating the source set of data as primary data source [this step is inherent in Fujibayashi, as the name of "primary storage device" speaks for itself];

            3. Creating a physical replica set of data (S) on a second data storage medium (155) for protection against physical disruptions to the source data set of data [paragraphs 2 and 23]

            4. Creating a logical replica set of data (L/S# in the local storage devices 130-140) for protection against logical disruptions to the source set of data [paragraph 20];

        ii. Fujibayashi, however, does not disclose that:

            1. If the first data storage medium become damaged, the system switches to the physical replica set of data in the second data storage medium as the primary data source, and

            2. If the source data set becomes corrupted, the system switches to the logical replica set of data as the primary data source.

        iii. The concept of switching to a local backup copy as a primary data source in case the primary data source is corrupted or switching to the secondary storage device that contains a remote copy of the primary data source as the primary

data source in case the primary storage device is damaged has been known and widely used in the art. One having ordinary skill in the art, who is familiar with the well known concept, looks at the teaching of Fujibayashi, would readily recognize that the local copy (e.g., L/S# in 130-140) is inherently utilized as the primary data source temporarily in case the primary data source (125) is corrupted. This is because the local copy is used to recover the lost data in the primary copy. Furthermore, one having ordinary skill in the art would readily recognize that in case of disaster happens that destroys the primary data storage device, the remote data copy in the secondary storage device would have been used as the primary source of data, temporarily, until the primary storage device and/or primary data copy is rebuilt or recovered. This is simply because the primary data source and/or data storage device is no longer usable. Moreover, one having ordinary skill in the art would readily recognize the that backing up a data set is for the purpose of using the backup copy as the primary copy in case the primary copy is no longer usable regardless of whether the primary copy is corrupted or the storage device that contain the primary data set is damaged.

iv. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further employ logic into the Fujibayashi system [if such logic is not already inherent in Fujibayashi] for switching to the physical replica set of data (155) as the primary data source in case the primary data storage medium becomes damaged and switching to the logical replica set of data (130-140) as the primary data source in case the source data set (p) in the storage device (125) is corrupted. The ability to quickly provide the availability of data locally in case of the primary copy is corrupted and/or to survive a disaster that destroys the primary data storage device provide sufficient suggestion and motivation to one having ordinary skill in the art at the time the invention was made to do such logic employment in the Fujibayashi system.

b. <u>As per claim 2</u>: Fujibayashi further teaches the second data storage medium (155) is physically remote from the first data storage medium (125) [figure 1].

c. <u>As per claim 3</u>: Fujibayashi further teaches local storage device (130-140) for storing a copy of the data source in the primary storage device (125) [figure 1, paragraph 20].

d. <u>As per claim 4</u>: Fujibayashi further teaches that the logical replica set of data in the storage devices (130-140) is a snapshot copy of the source set of the data in the storage device (125) [figure 1, paragraph 20].

e. <u>As per claims 5-6</u>, Fujibayashi further teaches multiple snapshot copies of the source data set, wherein each snapshot copy represent a different point-in-time version [i.e., snapshots ... as a function of time] of the source set of data [see again paragraph 20; and figure 3].

f. <u>As per claims 7-9</u>, Fujibayashi further teaches that the physical replica set of data is a mirror copy [through the synchronizing operation] of the source set of data [paragraph 23]. Synchronously or asynchronously mirroring a data set has been known and commonly used in the pertinent art. The tradeoff between the synchronously mirroring and asynchronously mirroring a data set is within the level of ordinary skill in the art.

g. <u>As per claims 10-11</u>: Fujibayashi further teaches that snapshot copies are created from both of the primary data source (p) and the secondary data copy (S) [see figure 1; paragraphs 20 and 23].

h. <u>As per claim 12</u>: Fujibayashi further teaches that the corrupted source set of data is recovered using the logical replica set of data from storage devices (130-140) [see paragraph 24].

i. <u>As per claims 13-24</u>, the claimed system encompasses basically the necessarily elements for carrying out the claimed steps in claims 1-12. Accordingly, claims 13-24 are rejected for the same reasons as set forth for claims 1-12, correspondingly.

j. <u>As per claims 25-36</u>: the claimed instruction set basically comprises the necessarily

instructions for carrying out the steps in claims 1-12. Accordingly, claims 25-36 are

rejected for the same reasons as set forth for claims 1-12, correspondingly.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. McBrearty, et al., US 2003/0191916, teaches a data backup system that includes both

local backup mirror and remote backup mirror.

b. Kekre et al., 6,785,789, teaches multiple backup copies of a data set.

c. Yamagami, US 2004/0205310, teaches that local mirroring is used for backup and

recovery, while remote mirroring is used for disaster recovery.

d. Yamagami, US 2003/0126358, teaches a local mirroring from both primary storage

devices and secondary/backup storage device.

e. Bergsten, 6,363,462, teaches multiple backup copies of a data set throughout different

storage devices at different physical locations.

f. GaliPeau et al., 5,799,141, teaches multiple remote backup copies of a data set.

8. Any inquiry concerning this communication or earlier communications from the examiner should

be directed to Hiep T. Nguyen whose telephone number is (571) 272-4197. The examiner can

normally be reached on Monday-Friday from 9:30 am to 6:00 pm.

9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,

Donald Sparks can be reached on (571) 272-4201. The fax phone number for the organization

where this application or proceeding is assigned is 703-872-9306.

10. Information regarding the status of an application may be obtained from the Patent Application

Information Retrieval (PAIR) system. Status information for published applications may be

obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR system,

see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hiep T Nguyen
Primary Examiner
Art Unit 2187

HTN